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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,307	05/25/2001	Lawrence P. Wackett	110.00440102	4705

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EXAMINER

HUTSON, RICHARD G

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 01/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/866,307

Applicant(s)

WACKETT ET AL.

Examiner

Richard G Hutson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-11 and 23-34 is/are pending in the application.
- 4a) Of the above claim(s) 2-11, 23, 24 and 31-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 2-11 and 23-34 are at issue and are present for examination.

#### ***Election/Restrictions***

Applicant's election with traverse of Group III, Claims 25-30, drawn to a method of treating a s-triazine-containing sample, classified in class 435, subclass 18, in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the inventions as claimed can be readily evaluated in one search without placing undue burden on the Examiner. Applicant's argument is not found persuasive because while the searches for the each of the groups overlap, they are not coextensive. For example, search of Group I would require search of subclass 435/195, search of Group II would require search of subclass 435/252.3 and a search of Group IV would require a search of subclass 435/6. A search of each of these subclasses would be unnecessary the search of the elected group III.

The requirement is still deemed proper and is therefore made FINAL.

Claims 2-11, 23, 24 and 31-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No. 8.

#### ***Priority***

Applicant's amendment of the first line of the specification to state that this application is a divisional of U.S. Patent Application No. 09/155,036, filed on 17 September 1998, which in turn is a 371 filing of International Patent Application No.

PCT/US98/00944, filed 16 January 1998, which in turn claims the benefit of U. S. Provisional Patent Application No. 60/035,404, filed 17 January 1997, all of which are hereby incorporated herein by reference in their entirety, is acknowledged. It is further noted that U.S. Patent Application No. 09/155,036 has issued as U.S Patent No. 6,265,201. It is suggested that applicants amend the specification to reflect this information.

### ***Information Disclosure Statement***

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Applicants filing of information disclosure filed 5/25/2001 is acknowledged. Those references considered have been initialed.

### ***Specification***

The disclosure is objected to because of the following informalities:

It is suggested that the description of the figures be amended to accurately reflect the figures themselves (i.e. Figure 1 **A-C**, Figure 2 **A-C**, etc...).

Figure 9 comprises a comparison of six different amino acid sequences from six different types of bacteria as indicated in the description of Figure 9. The description of

figure 9 also recites "SEQ ID NOs: 12-16". There is no indication as to which "SEQ ID NO" is associated with which sequence from which bacteria and further SEQ ID NOS 12-16 comprises only five sequences, not six as are listed in the figure. Appropriate explanation and/or amendment is requested.

Appropriate correction is required.

### ***Claim Objections***

Claims 25 is objected to because of the following informalities:

Claims 25, line 12, recites "altered catalytic **acitivity**". This should be "altered catalytic **activity**".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 (26-30 dependent on) is indefinite in that the language is vague and confusing. Specifically applicants description of the protein used in the claimed method which recites "a protein encoded by **a gene** having at least a portion of the nucleic acid sequence of **the gene** having at least 95% homology to the sequence beginning at

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position 236 and ending at position 1655 of SEQ ID NO: 1, wherein **the gene** is capable of **hybridizing under stringent conditions** to SEQ ID NO: 1, wherein there is at least one amino acid change in the protein encoded by the DNA fragment as compared with SEQ ID NO: 2 ..." is unclear and confusing. It is unclear exactly what the limitations of the protein to be used in the claimed method are. For instance, applicants make three references to "a/the gene" (bolded in the above recitation). It is unclear to which of the previous two "genes" the "wherein the gene" refers. A reasonable interpretation is that the "wherein the gene" refers to the second "gene", that which has at least 95% homology to the sequence beginning at position 236 and ending at position 1655 of SEQ ID NO: 1. Given this interpretation, the only limitation of the protein used in the claimed method is that it is encoded by **a gene** having at least a portion of the nucleic acid sequence of **the gene** having at least 95% homology to the sequence beginning at position 236 and ending at position 1655 of SEQ ID NO: 1, in which case the protein of the claimed method has no structural limitations as a gene having at least a portion of **the gene** having at least 95% homology to the sequence beginning at position 236 and ending at position 1655 of SEQ ID NO: 1 is a gene having at least a single nucleotide (whether if be a A, T, C or G). Since any gene which encodes a protein has at least such a portion of "the gene", the protein of the claimed method has no structural limitations.

In claim 25, there is no antecedent basis for "the DNA fragment".

Claim 30, which is dependent from claim 25, recites "the protein encoded by the gene", wherein claim 25 recites "the protein encoded by the DNA fragment", thus it is not entirely clear if applicants are referring to the same "protein" as there is not proper antecedent basis in claim 25. Further as above with respect to claim 25, it is not clear if the gene of claim 30 is referring to one of the two genes in claim 25, or to which one it is referring.

Claim 25 (26-30 dependent on) is indefinite in the recitation of "stringent conditions" as the specification does not define what conditions constitute "stringent". While page 21, line4s 1-11 of the specification describes some conditions which are intended to be highly stringent, there is nothing to suggest that other conditions would not also be included within the scope of this term, stringent, and in the art what is considered stringent varies widely depending on the individual situation as well as the person making the determination. As such it is unclear how homologous to the sequence of a gene encoding SEQ ID NO:1, a sequence must be to be included within the scope of these claims.

Claim 25 (26-30 dependent on) is further indefinite in that the recitation "altered catalytic activity" is unclear. On page 7, lines 10-17, applicants disclose that in one embodiment, the altered catalytic activity is an improved ability to degrade ATRAZINE or an altered substrate activity. It is unclear what applicants intent in the claim is with respect to "altered catalytic activity" and what this encompasses. Does this encompass

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alterations of the catalytic activity such that the "catalytic activity" remains the same, but the parameters of the catalytic activity are changed such as  $K_M$ ,  $V_m$  and substrate specificity etc...or does "altered catalytic activity" encompass completely new and different catalytic activities?

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 25-30 are directed to all possible methods of treating a sample comprising an s-triazine-containing compound comprising adding a composition to a sample comprising an s-triazine-containing compound, wherein the composition comprises any protein (See above 112 second paragraph rejection and discussion) having an altered catalytic activity relative to the protein of SEQ ID NO: 2. The specification, however, only provides those representative species of methods of treating a sample comprising an s-triazine-containing compound comprising the use of a composition comprising a protein having the amino acid sequence of SEQ ID NOS: 5, 6 or 22-26. There is no disclosure of any particular structure to function/activity relationship in the disclosed species. The specification also fails to describe additional



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representative species of these methods or the compositions used by these methods by any identifying structural characteristics or properties other than the having an altered catalytic activity relative to the protein of SEQ ID NO: 2, for which no predictability of structure is apparent. Given this lack of additional representative species as encompassed by the claims, Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Applicant is referred to the revised guidelines concerning compliance with the written description requirement of U.S.C. 112, first paragraph, published in the Official Gazette and also available at [www.uspto.gov](http://www.uspto.gov).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25-30 are rejected under 35 U.S.C. 102(a) as being anticipated by DeSouza et al. (*Journal of Bacteriology*, Vol. 178, No. 16, August 1996, pages 4894-4900, See IDS).

DeSouza et al. teach the identification, isolation and cloning of the gene encoding atrazine chlorohydrolase from *Pseudomonas* sp. Strain ADP. DeSouza et al. further teach methods of treating a sample containing s-triazine-containing compound, atrazine, terbuthylazine and melamine with the recombinantly expressed atrazine chlorohydrolase, as well as bacterial cultures comprising s-triazine degrading compounds. Claim 30 is included in this rejection because based on the above 112 second paragraph rejection and discussion, it is not clear to what protein applicants are referring to as consisting of SEQ ID NOS: 5, 6 and 22-26. Thus claims 25-30 are anticipated by DeSouza et al.

Claims 25-27 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandelbaum et al. (Applied and Environmental Microbiology, Vol. 61, No. 4, April 1995, pages 1451-1457, See IDS).

Mandelbaum et al. teach the isolation and characterization of a *Pseudomonas* sp. that mineralizes the s-triazine herbicide atrazine. Mandelbaum et al. further teach methods of treating a sample containing s-triazine-containing compound, atrazine, terbuthylazine and melamine with the *Pseudomonas* sp. Claim 30 is included in this rejection because based on the above 112 second paragraph rejection and discussion, it is not clear to what protein applicants are referring to as consisting of SEQ ID NOS: 5, 6 and 22-26. Thus claims 25-27 and 30 are anticipated by Mandelbaum et al.

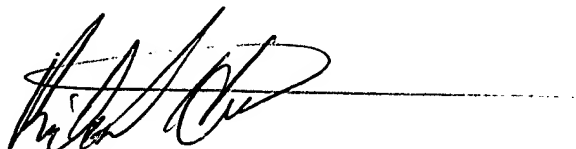
**Remarks**

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard G Hutson whose telephone number is (703) 308-0066. The examiner can normally be reached on 7:30 am to 4:00 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (703) 308-3804. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

A handwritten signature in black ink, appearing to read 'Richard Hutson', followed by a horizontal line.

Richard Hutson, Ph.D.  
Patent Examiner  
Art Unit 1652  
January 24, 2003